What is claimed is:

1. An image capturing apparatus having plural kinds of image sensors, sensitivities of which are different relative to each other, comprising:

a scene-referred raw data generating section to generate scene-referred raw data sets, each of which is acquired from each of said plural kinds of image sensors through an image capturing operation;

a scene-referred image data synthesizing section to synthesize scene-referred image data by combining at least two of said scene-referred raw data sets with each other into a standardized form;

a synthesizing-information data generating section to generate synthesizing-information data for decomposing said scene-referred image data into said at least two of said scene-referred raw data sets;

an output-referred image data generating section to generate output-referred image data by applying an optimization processing to said scene-referred image data, so that a visual image optimized for an output medium can be formed on said output medium, based on said output-referred image data;

a differential data generating section to generate differential data between said scene-referred image data and said output-referred image data; and

a controlling section to control a data-recording operation, so that said synthesizing-information data and said differential data are attached to said output-referred image data in order to store all of them into a storage medium.

2. The image-capturing apparatus of claim 1,

wherein said controlling section controls said data-recording operation, so that image-capturing information data, representing an image-capturing condition, are also attached to said output-referred image data in order to store all of them into a storage medium.

3. The image-capturing apparatus of claim 1,

wherein said plural kinds of image sensors include a high-sensitive image sensor and a low-sensitive image sensor; and

wherein said scene-referred raw data sets include a high-sensitivity scene-referred raw data set, acquired from said high-sensitive image sensor through said image-capturing

operation, and a low-sensitivity scene-referred raw data set, acquired from said low-sensitive image sensor through said image-capturing operation.

4. The image-capturing apparatus of claim 3,

wherein said high-sensitivity scene-referred raw data set represents a monochrome image, which includes only luminance information captured through said image-capturing operation, while said low-sensitivity scene-referred raw data set represents a color image captured through said image-capturing operation.

5. The image-capturing apparatus of claim 3,

wherein said high-sensitive image sensor includes a plurality of first photosensitive elements and said low-sensitive image sensor includes a plurality of second photosensitive elements; and

wherein said plurality of first photosensitive elements and said plurality of second photosensitive elements are arranged within a same image area in such a manner that said first photosensitive elements and said second photosensitive elements are staggered relative to each other in both

horizontal and vertical directions of said image area, like
as a honeycomb pattern.

6. The image-capturing apparatus of claim 1, further
comprising:

an instruction inputting section to input instructed
contents of an correction processing of image sensor
characteristics into said scene-referred image data
synthesizing section;

wherein said scene-referred image data synthesizing
section applies said correction processing of said image
sensor characteristics to said at least two of said scene-
referred raw data sets, based on said instructed contents
inputted by said instruction inputting section, before
combining them with each other.

7. The image-capturing apparatus of claim 1,

wherein a color space of said scene-referred image data
is defined by anyone of scRGB, RIMM RGB, ERIMM RGB, and a
color space of said output-referred image data includes
anyone of sRGB, ROMM RGB.

8. An image-processing apparatus, comprising:

an inputting section to input output-referred image
data generated by an image-capturing apparatus having plural
kinds of image sensors whose sensitivities are different
relative to each other, differential data attached to said
output-referred image data, and synthesizing-information data
for decomposing scene-referred image data, which are
generated by processing both said output-referred image data
and said differential data, into a plurality of scene-
referred raw data sets;

a scene-referred image data synthesizing section to
synthesize scene-referred image data by combining said
output-referred image data and said differential data with
each other into a standardized form;

a scene-referred raw data generating section to
generate said plurality of scene-referred raw data sets, by
decomposing said scene-referred image data, based on said
synthesizing-information data; and

an output-referred image data generating section to
generate new output-referred image data by applying an
optimization processing to said plurality of scene-referred
raw data sets, so that a visual image optimized for an output
medium can be formed on said output medium, based on said new
output-referred image data.

9. The image-processing apparatus of claim 8,

wherein said inputting section also inputs image-capturing information data representing an image-capturing condition; and

wherein said output-referred image data generating section employs said image-capturing information data when applying said optimization processing to said plurality of scene-referred raw data sets, in order to generate said new output-referred image data.

10. The image-processing apparatus of claim 8,

wherein said plural kinds of image sensors include a high-sensitive image sensor and a low-sensitive image sensor; and

wherein said scene-referred raw data sets include a high-sensitivity scene-referred raw data set, acquired from said high-sensitive image sensor, and a low-sensitivity scene-referred raw data set, acquired from said low-sensitive image sensor.

11. The image-processing apparatus of claim 10,

wherein said high-sensitivity scene-referred raw data set represents a monochrome image, which includes only luminance information of a captured image, while said low-sensitivity scene-referred raw data set represents a color image.

12. The image-processing apparatus of claim 8, further comprising:

an instruction inputting section to input instructed contents of an correction processing of image sensor characteristics into said output-referred image data generating section;

wherein said output-referred image data generating section applies said correction processing of said image sensor characteristics to said plurality of scene-referred raw data sets, based on said instructed contents inputted by said instruction inputting section, before applying said optimization processing to them.

13. The image-processing apparatus of claim 1,

wherein a color space of said scene-referred image data is defined by anyone of scRGB, RIMM RGB, ERIMM RGB, and a

color space of said output-referred image data includes

anyone of sRGB, ROMM RGB.

14. An image-recording apparatus, comprising:

an inputting section to input output-referred image

data generated by an image-capturing apparatus having plural

kinds of image sensors whose sensitivities are different

relative to each other, differential data attached to said

output-referred image data, and synthesizing-information data

for decomposing scene-referred image data, which are

generated by processing both said output-referred image data

and said differential data, into a plurality of scene-

referred raw data sets;

a scene-referred image data synthesizing section to

synthesize scene-referred image data by combining said

output-referred image data and said differential data with

each other into a standardized form;

a scene-referred raw data generating section to

generate said plurality of scene-referred raw data sets, by

decomposing said scene-referred image data, based on said

synthesizing-information data;

an output-referred image data generating section to

generate new output-referred image data by applying an

optimization processing to said plurality of scene-referred
raw data sets; and

an image-forming section to form an visual image on an
output medium, based on said new output-referred image data
optimized for said output medium.

15. The image-recording apparatus of claim 14,

wherein said inputting section also inputs image-
capturing information data representing an image-capturing
condition; and

wherein said output-referred image data generating
section employs said image-capturing information data when
applying said optimization processing to said plurality of
scene-referred raw data sets, in order to generate said new
output-referred image data.

16. The image-recording apparatus of claim 14,

wherein said plural kinds of image sensors include a
high-sensitive image sensor and a low-sensitive image sensor;
and

wherein said scene-referred raw data sets include a
high-sensitivity scene-referred raw data set, acquired from
said high-sensitive image sensor, and a low-sensitivity

scene-referred raw data set, acquired from said low-sensitive image sensor.

17. The image-recording apparatus of claim 16,

wherein said high-sensitivity scene-referred raw data set represents a monochrome image, which includes only luminance information of a captured image, while said low-sensitivity scene-referred raw data set represents a color image.

18. The image-recording apparatus of claim 14, further comprising:

an instruction inputting section to input instructed contents of an correction processing of image sensor characteristics into said output-referred image data generating section;

wherein said output-referred image data generating section applies said correction processing of said image sensor characteristics to said plurality of scene-referred raw data sets, based on said instructed contents inputted by said instruction inputting section, before applying said optimization processing to them.

19. The image-recording apparatus of claim 14,

wherein a color space of said scene-referred image data is defined by anyone of scRGB, RIMM RGB, ERIMM RGB, and a color space of said output-referred image data includes anyone of sRGB, ROMM RGB.